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CHRONIC WASTING DISEASE FAQs

What is CWD?

Chronic wasting disease affects the central nervous system of mule deer, black-tailed deer (mule deer variant), rocky mountain elk and white-tailed deer. Most scientists believe CWD is caused by an infectious protein or prion. CWD has been experimentally transmitted, via ingestion of the prions, to Moose. The brain of affected members of the deer family (cervidae) will have a microscopic sponge-like appearance. This characteristic finding places it in a group of diseases known as transmissible spongiform encephalopathies (TSEs). Scrapie of domestic sheep and goats, bovine spongiform encephalopathy (BSE or "mad cow disease") of cattle and transmissible mink encephalopathy of farmed mink are all types of TSEs in domestic and captive-reared animals. Creutzfeldt-Jakob Disease (CJD) is a human TSE that occurs throughout the world.

Isn't CJD the same as mad cow disease and CWD?

No, although CJD, mad cow disease and CWD are all TSEs, and therefore cause similar illnesses and similar lesions in the brain of species they affect, these diseases are caused by distinct prions.

Isn't there a connection between CJD and mad cow disease (BSE)?

There are four types of CJD: sporadic, familial, iatrogenic and new-variant CJD.
Sporadic, familial and iatrogenic CJD occur worldwide, including the USA, and have been recognized for decades, with a frequency of approximately 1 case per 1 million people annually.

New-variant CJD (vCJD) is a recently described and rare form of the disease found in Great Britain and some other European countries. At this time, vCJD has never been found in the USA, with the exception of one person who had previously lived in Great Britain. Cases of vCJD primarily affect a younger age group than sporadic CJD, and clinical signs differ subtly with respect to onset and progression.

There is strong evidence that the cases of vCJD in Great Britain are related to the recent (since 1986) occurrence of BSE in cattle in that country. It appears that the BSE prion has been able to infect humans, probably through the consumption of beef products from infected cattle. Hundreds of thousands of cases of BSE have occurred in British cattle and there have been 155 confirmed or probable cases of vCJD in people, as of May 2005. State, federal and international agencies, such as the Centers for Disease Control and Prevention (CDC) and the World Health Organization (WHO), are currently working together to rapidly identify suspect cases of CJD and learn more about the potential connection between BSE and vCJD.

For more information on CJD, visit the New Jersey Department of Health and Senior Services website (http://www.state.nj.us/health/cd/f_creutzfeldt.htm).

Can humans get CWD?

No cases of human CJD or variant CJD have been linked to CWD in deer. It's important to remember that animals from known CWD regions in the Western U.S. have been in the human food chain for decades without a known case of related human illness. In Colorado, no cases of CWD or vCJD have been found in people or cattle living in the CWD-infected area, despite over 16 years of monitoring.

Epidemiologists with the CDC have conducted extensive studies into the potential for human risk from CWD. They were not able to identify any association between human neurological disease and CWD and concluded that there is no evidence that CWD is linked to disease in humans. Nevertheless, based on recommendations of the CDC and the World Health Organization, the best advice is to act with common sense and do not eat meat from an apparently sick deer, elk or any animal found dead or known to be positive for CWD. Also, as a precaution in areas where CWD has been identified, hunters are advised not to eat tissues known to harbor CWD prions (lymph nodes, tonsils, spleen, pancreas, brain, and spinal cord) and to "bone out" the meat. Boning out the meat reduces major sources of prions, but doesn't completely eliminate them.

What does it look like?

The clinical signs are not unique to this disease, but loss of body weight, even as the deer or elk continues to eat is typical. The animals may walk in the same short path, repeatedly. They may be slightly unsteady standing with legs separated wider than normal. Some may have subtle head tremors and are found near streams or ponds. They may have periods when they appear sleepy or unresponsive or may carry their head down with their ears lowered. Increased salivation, drinking and urination may also occur. Usually, months to years pass from when the animal is infected to when it shows these signs and they have not been seen in deer younger than 17 months. Once the signs develop they usually last for months, but occasionally they end in death within just a few days.

How do we test for it?

Currently there is no reliable test for this disease in live animals. Microscopic examination of the brain of deer, which die or are killed, reveals the sponge-like changes typical of CWD. Early in the disease, before the spongy changes of the brain occur, special chemical stains for the CWD prion will reveal its presence. These stains have also been used to demonstrate the CWD prion in biopsy samples of tonsil from live deer, but these tests require anesthetizing the deer and they don't work well on elk. Studies have shown that in a deer with the CWD prion is more likely to be detected in the lymph node near the pharynx than the brain stem, although, both tissues are routinely sampled to diagnose the disease.

Where did it come from?

CWD has been known by its symptoms in mule deer for more than 30 years and may have been present in free ranging mule deer for more than 40 years. It was first recognized as a TSE in 1977 and was diagnosed in captive mule deer and black-tailed deer in Wyoming. In 1979 it was diagnosed in captive elk. Also about that time a captive mule deer was diagnosed with CWD in a zoo in Ontario, but the disease did not persist in that location. In 1981 CWD was diagnosed in

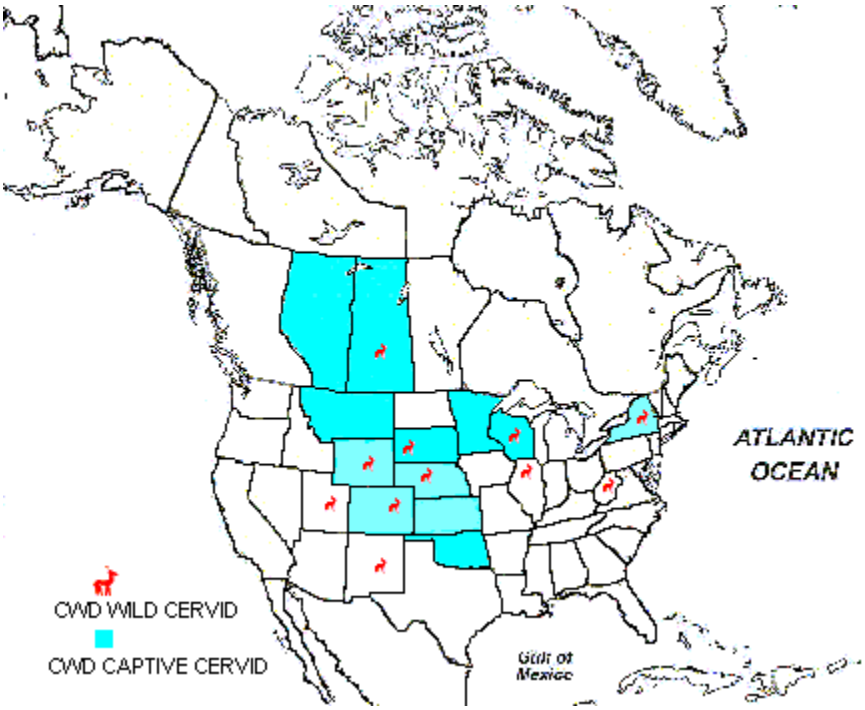
a free-ranging elk in Colorado and in 1983 the first hunter harvest survey was conducted for CWD. At present, three species of the deer family are known to be naturally susceptible to CWD. Cattle and other domestic livestock may be resistant to natural infection. CWD could have been derived from alteration of an existing TSE or the CWD prion could have occurred spontaneously. Its origin may never be known.

Is it in New Jersey?

Over 2,150 wild and captive deer and 5 captive elk have been tested in New Jersey as of November 22, 2005. All were negative for CWD. For more information on the New Jersey CWD surveys see the survey updates in this website.

Where is it?

Chronic wasting disease (CWD) has been diagnosed in deer and elk in 14 states and 2 Canadian Provinces as of November 2005. CWD is known to exist in both captive and wild deer and elk from Colorado, Nebraska, New York, South Dakota, Wisconsin, Wyoming* and Saskatchewan. It has been detected only in captive cervids from Alberta, Kansas, Minnesota, Montana and Oklahoma. CWD has been found only in wild free-ranging deer in Illinois, New Mexico, West Virginia and Utah. CWD infected farmed elk in Korea came from an infected herd in Saskatchewan. * captive research herd



How is it spread?

CWD can be transmitted among adult deer and the prions have been found in the brain, eyes, spinal cord, spleen, tonsils and lymph nodes. This pattern of transmission and association of prions with lymph tissue in the mouth and intestinal tract has led to the hypothesis that the CWD agent may find its way through saliva, feces and urine onto grasses and other food. Deer eating contaminated food may contract the disease. It has also been shown that affected organs of deer dying in the wild or discarded may be a source of contamination for other deer feeding at the

site. The prion is very resistant to traditional disinfectants and persists a long time in the environment. Healthy deer restored to cleaned, disinfected pens developed CWD. The highest prevalence of CWD in free-ranging deer (15%) has been higher than in elk (1%) in Colorado. Over half the 154 deer in a captive herd in Nebraska tested positive for CWD. The rate of infection in free-ranging deer surrounding the captive herd's enclosure steadily declined with distance. The captive animals were probably the source of infection for the wild deer. It is not known if urine from captive infected deer sold to commercial outlets and when used as lures could be a means of disseminating the CWD agent.

How can it be prevented or controlled?

The strategy, which makes most sense, is one of surveillance to detect the disease, limit movement of infected animals and slaughter of known infected herds. Twenty-one captive herds of deer and or elk have been identified as infected with the CWD prion in the United States. All have been depopulated. The USDA Secretary of Agriculture released $12 million in funds in February 2002 to indemnify captive deer and elk herds for depopulation due to CWD. In 1999 the US Animal Health Association asked the USDA for a captive elk and deer herd certification process, which could be used to declare a captive herd free of CWD. While drafts of this process are being reviewed the most reliable protection for New Jersey is to prohibit the import or export of members of the deer family. This is accomplished in part under authority of the Director of the NJ Division of Fish and Wildlife through restriction of permits to possess captive deer. While this safeguard has already been taken, policies on captive herd health surveillance will focus on good record keeping, reporting of unexplained deer or elk deaths, and inspections. Active surveillance through sampling hunter-killed deer and passive surveillance through submissions of sick deer to the Division's Office of Fish and Wildlife Health and Forensics will also comprise the core of the response to the CWD threat to New Jersey. These efforts will be undertaken in cooperation with and assistance from the USDA – APHIS Veterinary Services, Wildlife Services and NJ Department of Agriculture's Division of Animal Health. On May 16, 2002 The U.S. Department of Agriculture and the U.S. Department of the Interior announced the formation of a joint working group on chronic wasting disease (CWD) to ensure a coordinated and cooperative federal approach to assisting the states with CWD response efforts.

How can hunters help?

Hunters are asked not to shoot sick or abnormally behaving deer, but note the animal's location and report it to the Division's Office of Fish and Wildlife Health and Forensics at 908-735-6398 or a local Division field office with numbers listed in the Digest as soon as possible. Hunters can cooperate in donating the heads of their deer when asked by a Division Biologist at selected deer check stations or through butcher shops. Those NJ residents returning from hunting in states with CWD in their deer and elk populations must follow the rules of those states and bone out the meat being sure to remove brain, spinal cord, and lymph nodes which may harbor the prions. Skull plates should be washed of residual brain tissue and soaked in 30% Clorox solution for 15 minutes to destroy the prions. Deer carcasses with meat removed must be disposed of in the trash rather than discarded in fields where deer may have contact with the remains.

How can captive deer owners help?

Don't export or import deer in New Jersey until a national herd certification system is approved and the Division lifts the ban on such movement. If you have a deer, elk or other member of the deer family die of natural causes and especially one which is skinny at death, insure the head is

kept cool (not frozen) and immediately notify the NJ Division of Fish and Wildlife at 908-735-6398 so arrangements can be made to collect a portion of the brain for testing for CWD.

How can butchers and taxidermists help?

Use food waste dumpsters for disposal of waste materials from your facility. This is particularly important if you receive deer or elk from any of the states or provinces listed as having CWD in wild and/or captive deer. This will eliminate possible exposure of deer to contaminated waste, which in the case of taxidermy operations may include attractive salty tissues.

Links for chronic wasting disease, its management and related diseases:

http://wyovet.uwyo.edu/WSVL/updates/cwd.htm. U. of Wyoming

http://wildlife.state.co.us/hunt/HunterEducation/chronic.asp Colorado

http://www.outdoornebraska.org and click on wildlife. Nebraska